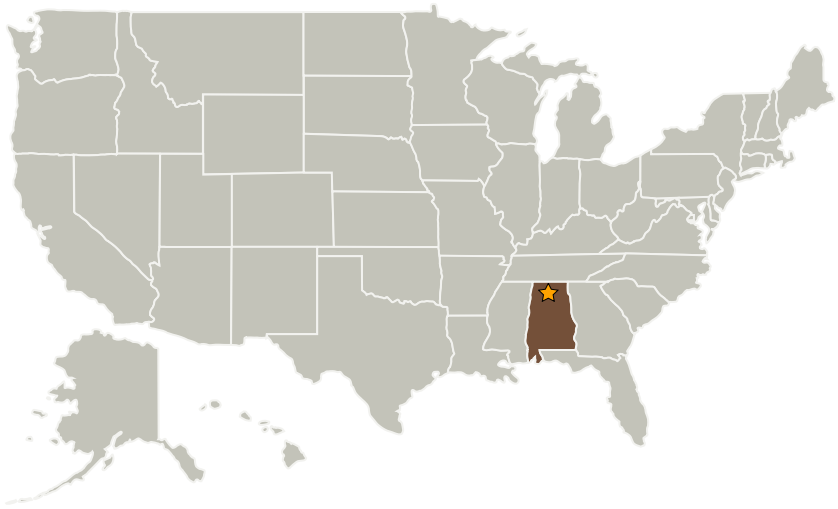
Thin Film Flat Panel Off-Axis Solar Concentrator with Flux Distribution, Phase II

Completed Technology Project (2005 - 2007)

Project Introduction

Long duration space missions and extended manned missions on the surface of the moon and Mars are key elements of NASA's new Vision. These missions will require utilization of in situ resources and materials to reduce up-mass and up-volume and for fabricating habitable structures from in situ materials. The overall objective of this Phase II is to design and fabricate an in situ materials processing solar furnace system using the flat panel thin film MPRS concentrator technology successfully developed during Phase I. The capability of this system will be demonstrated by realistically processing lunar regolith simulant into useful product specimens such as fiberglass rods for structural reinforcement and bricks for habitat construction. The technology foundation established in Phase I, which demonstrated unprecedented solar concentrator design and performance versatility, combined with UAT's extensive experience in designing and fabricating thin film concentrators and lightweight deployable structures, provides a sound basis to project that this objective can be achieved.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
★Marshall Space Flight Center(MSFC)	Lead Organization	NASA Center	Huntsville, Alabama
United Applied Technologies, Inc.	Supporting Organization	Industry	Huntsville, Alabama

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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Marshall Space Flight Center (MSFC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

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Primary U.S. Work Locations
Alabama

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Technology Areas

Primary:

- TX07 Exploration Destination Systems
  - TX07.2 Mission Infrastructure, Sustainability, and Supportability
    - TX07.2.3 Surface Construction and Assembly